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the living marattiaceous genus Kaulfussia, but differs from it in having the ringlike sorus of sporangia multiseriate instead of simple.

In the sixth memoir *Antholithus Zeilleri* Nath. is discussed, which has been regarded as the staminate inflorescence of Baiera. It is shown that the fossils in question consist of dichotomously divided, dorsiventral organs, the ultimate divisions of which bore eight sporangia. Consequently they do not resemble the staminate flowers of the living Ginkgo.

Throughout the author gives paramount importance to the microscopic examination of his material, and suggests many ingenious and some novel devices for the preparation of the objects for the microscope.—E. C. JEFFREY.

Anatomy of Veronica and Gratiola.—The internal structure of the stem and leaf of about 60 species of Veronica and of *Gratiola officinalis* has been studied by HUCHEDÉ,[10] and his results constitute a very important and interesting contribution to the knowledge of the structure of these genera, especially of the former. The material examined consisted of species from Europe, Asia, Australia, and New Zealand, thus comprising both herbaceous and suffrutescent forms. So far as concerns the leaf and stem, the author has demonstrated that a considerable variation in structure exists in Veronica, in regard to epidermis, chlorenchyma, hairs, endodermis, and pith, and the petiole also offers several good characters for distinguishing a number of species. The species from New Zealand differ in a marked way from the European; for instance in regard to the chlorenchyma, which is mostly composed of palisades, unless it is bifacial; furthermore, by the veins (circular in cross-section) being imbedded in the chlorenchyma and supported by stereome or collenchyma. The stem of the New Zealand species contains but little pericyclic stereome, while the pith is frequently sclerotic. It is quite interesting to see that the author has observed some anatomical characters sufficient for distinguishing *V. virginica* L. from *V. sibirica* L., and *V. saxatilis* Scop. from *V. fruticulosa* L., which by many authors have been regarded as synonyms. Very few species are considered of any importance as medicinal plants, and our *V. virginica* (NUTTALL'S *Leptandra virginica*) is actually the only one which is recognized as such and is still in use (the rhizome).

The paper contains well-written anatomical diagnoses of these species, accompanied by a number of very fine drawings, showing their anatomical characteristics. It is only to be regretted that the root has not been considered, for there is no doubt that the structure of this organ must show variations of no small importance, when we bear in mind that among these species of Veronica are both terrestrial and aquatic types, annual and perennial, herbaceous and suffrutescent. The fact that the primary root persists in some of them, and that it becomes replaced by secondary roots in others, might also deserve notice.

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[10] HUCHEDÉ, J., Veroniques et Gratiole. Etude histologique et pharmacologique. Travaux Lab. Mat. Medic. Ecole Sup. Pharm. Paris 5:137. 1907.

However, we admit that it is often very difficult to obtain material so well represented as to include the root-system, especially of herbarium specimens.—THEO. HOLM.

Anatomy of the leaves of Ranunculaceae.—GOFFART[11] has described the leaf structure of species representing 23 genera of Ranunculaceae, nearly all from the old world. The paper is illustrated by about 400 excellent figures of the leaf outline and the internal structure. So many anatomical details are recorded that an abstract in brief space is impossible.

The author has followed the method suggested by his teacher, the distinguished anatomist A. GRAVIS, to examine the leaf at very many places and at various stages of its development, and to give due consideration to the course of the mestome strands from stem to petiole and throughout the blade. In this way one obtains a most complete idea of the structural peculiarities, and such are highly welcome to students of affinities, expressed not only by floral structures but also by internal organization. Much has been written about the validity of several of these genera, considered from a systematic point of view, especially judging from the floral characters. It is therefore interesting to learn from this paper that, so far as concerns the leaf structure, Hepatica is not distinct from Anemone, and the same seems to be the case with Nigella-Garidella, Actaea-Cimicifuga, and Ficaria-Oxygraphis-Ranunculus. However, in respect to Oxygraphis, the author has examined only *O. Cymbalaria*, which in the reviewer's opinion is no true Oxygraphis, but a Ranunculus. An examination of *O. glacialis*, for instance, would no doubt have led to a different conclusion. On the other hand, Pulsatilla appears to be generically distinct from Anemone, and Batrachium from Ranunculus. Future investigations, for instance, of the singular North American representatives of Ranuculus constituting the section Crymodes, Cyrtorhyncha, and Pseudaphanostemma might lead to the segregation of these from Ranunculus altogether. For such a purpose GOFFERT's contribution is a very important one; and it might be stated at the same time that the same family has been treated by other pupils of GRAVIS in regard to the structure of the pericarp and spermoderm, the embryo and seedlings, etc., the result of which have appeared in the *Archives* since 1897.—THEO. HOLM.

Prothallia of Kaulfussia and Gleichenia.—One of the results of CAMPBELL'S recent visit to Java is the publication of an account[12] of the prothallia of the oriental and monotypic Kaulfussia and of Gleichenia. The account fills in an important gap in our knowledge of the prothallia and sex organs of Filicineae; and it is of interest to note that the account satisfies the desire for completeness rather than the desire for new things.

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[11] GOFFART, JULES, Recherche sur l'anatomie des feuilles dans les Renonculacées. Arch. Inst. Bot. Univ. Liège III. pp. 187. *pls. 14.* 1901. The editors feel justified in calling attention to so old a publication in view of the fact that it has an important bearing upon the current taxonomic study of the family.

[12] CAMPBELL, D. H., The prothallium of Kaulfussia and Gleichenia. Ann. Jard. Bot. Buitenzorg II. 7:69–102. *pls. 7–14.* 1908.